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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Anthony Moon

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EXAMINER

LA, ANH V

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,862	Applicant(s) MOON ET AL.	
	Examiner Anh V. La	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/6/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10, 12-18, 20-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Campbell (US 5,521,515).

Regarding claim 1, Campbell discloses a method for detecting an object using a capacitive sensor output signal, comprising measuring an output V_o from the capacitive sensor 26 at spaced apart intervals to obtain a sequence of output values, comparing 36 the sequence of sensor output values with comparison data indicative of an ideal sensor output sequence, and determining that an object has been detected where a match is obtained between the sequence of output values and the comparison data (figures 1-4).

Regarding claim 2, Campbell discloses the sequence of sensor output values are stored in a buffer, and the method further comprises measuring a next output value from the capacitive sensor, deleting a sensor output value according to a FIFO scheme, adding the next sensor output value to the sequence of sensor output values, comparing the sequence of sensor output values with the predetermined comparison data, repeating these steps until an object is detected (column 3, lines 15- col. 6, lines 67).

Regarding claim 3, Campbell discloses said comparing includes obtaining an error value between the sensor output values and the comparison data and determining that a match has been obtained where the error value is less than a threshold value (col. 5, lines 30-40).

Regarding claim 4, Campbell discloses the threshold value corresponds to a predetermined measure of acceptable error between the actual data and the ideal data (col. 5, lines 30-40).

Regarding claim 5, Campbell discloses the intervals corresponding to the sensor moving a predetermined distance (fig. 1-4).

Regarding claim 6, Campbell discloses the capacitive sensor output being measured at spaced apart intervals using a triggering pulse (fig. 1-4).

Regarding claim 7, Campbell discloses the triggering pulse being obtained from a speed sensor measuring distance moved by the capacitive sensor (fig. 1-4).

Regarding claim 8, Campbell discloses the comparison data values relate to an object having a height equal to or greater than a height at which the sensor is positioned, and at intervals in which the sensor moves a predetermined distance (fig. 1-4).

Regarding claim 9, Campbell discloses the comparison data is stored in a look-up table 36.

Regarding claim 10, Campbell discloses the comparison data is obtained by calculating an ideal output for a particular change in distance (fig. 1-4).

Regarding claim 12, Campbell discloses the capacitive sensor being used in relation to a vehicle (fig. 5).

Regarding claim 13, Campbell discloses means for measuring an output V_o from the capacitive sensor 26 at spaced apart intervals to obtain a sequence of output values, data storage means 38 comprising comparison data indicative of an ideal sensor output sequence, comparator 36 for comparing the sequence of sensor output values with predetermined comparison data indicative of an ideal sensor output sequence, and means for determining that an object has been detected where a match is obtained between the sequence of output values and the comparison data (figures 1-4).

Regarding claim 14, Campbell discloses the data storage means being a look up table 36, 38.

Regarding claim 15, Campbell discloses a triggering means for generating a triggering pulse to indicate the spaced apart intervals (fig. 1-4).

Regarding claim 16, Campbell discloses the triggering means being a speed sensor measuring distance moved by the capacitive sensor (fig. 1-4).

Regarding claim 17, Campbell discloses a circular buffer 38 for storing the sequence of measured sensor output values.

Regarding claim 18, Campbell discloses a method of regulating a controller in a capacitive sensor system, the controller having a controller reference, the method comprising measuring output values V_o from the capacitive sensor 26 at spaced apart intervals, periodically determining whether a comparison value, indicative of the measured output, differs from the controller reference, and determining whether to update the controller reference based upon the difference between the comparison value and the controller reference (fig. 1-4, col. 3, line 20- col. 5, line 55).

Regarding claim 20, Campbell discloses an object being detected when the sequence of output values is increasing (fig. 1-4).

Regarding claim 21, Campbell discloses the comparison value being calculated by filtering spurious values from a sequence of measured sensor output values, and averaging the sequence of measured sensor output values to obtain the comparison value (fig. 4).

Regarding claim 22, Campbell discloses the controller reference is updated with the last value in the sequence of filtered output values (fig. 4).

Regarding claim 23, Campbell discloses the controller reference is updated by one or more increments or decrements (col. 3, line 25- col. 5, line 55).

Regarding claim 24, Campbell discloses an apparatus for regulating a controller of a capacitive sensor system comprising means for measuring output values V_o from the capacitive sensor 26 at spaced apart intervals, data storage means 38 for storing a

controller reference, periodically determining whether a comparison value, indicative of the measured output, differs from the controller reference, and comparator (fig. 4) for determining whether a comparison value, indicative of the measured output, differs from the controller reference, and means for determining whether to update the controller reference based upon the difference between the comparison value and the controller reference (fig. 1-4, col. 3, line 20- col. 5, line 55).

Regarding claim 25, Campbell discloses the comparator comprising a filter for filtering spurious values from the measured output values, and second storage means for storing a sequence of measured output values, and means for averaging the sequence of measured output values to obtain a comparison value, wherein the comparison value is compared with the controller reference (fig. 1-4).

Regarding claim 26, Campbell discloses the second storage means being a circular buffer 38.

Regarding claim 27, Campbell discloses a method for moderating an output from a capacitive sensor system comprising measuring the output V_o from the capacitive sensor 26 at spaced apart intervals, comparing a measured output value with a corresponding comparison data value indicative of an ideal sensor output to determine if the measured output value differs from the comparison data value (fig. 4), and determining a moderated output value, such that the moderated output value corresponds to the measured output value except where the comparison shows the measured output value to differ from the corresponding comparison data value, wherein

the moderated output value is adjusted to reduce the difference from the comparison data value (fig. 1-4, col. 3, line 20- col. 5, line 55).

Regarding claim 28, Campbell discloses the moderated output value corresponds to comparison data value when the comparison shows the measured output value to be lower than the comparison data value (fig. 4).

Regarding claim 29, Campbell discloses the output data is only moderated once an object is detected (col. 3, line 35- col. 5, line 55).

Regarding claim 30, Campbell discloses each of the sensor output values measured at spaced apart intervals being sequentially compared with a corresponding comparison data value (fig. 1-4).

Regarding claim 31, Campbell discloses the comparison data being obtained by calculating an ideal output for a particular change in distance (fig. 1-4).

Regarding claim 32, Campbell discloses a vehicle proximity sensor system comprising means for measuring an output V_o from the capacitive sensor 26 at spaced apart intervals, data storage means 38 comprising comparison data indicative of an ideal sensor output, comparator (fig. 4) for comparing a measured output value with a corresponding comparison data value indicative of an ideal sensor output to determine if the measured sensor output value differs from the comparison value by a predetermined amount, and means for determining a moderated output value, such that the moderated output value corresponds to the measured output value except where the comparison shows the measured output value to differ from the corresponding

comparison data value, wherein the moderated output value is adjusted to reduce the difference from the comparison data value (fig. 1-4, col. 3, line 20- col. 5, line 55).

Regarding claim 33, Campbell discloses an output means for outputting the moderated output value to a warning device in order to generate an appropriate warning signal based upon the value of the moderated output (fig. 1-5).

3. Claims 11 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fergusson, Inaba, Murao, and Simon disclose detection systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh V. La whose telephone number is (571) 272-2970. The examiner can normally be reached on Mon-Fri from 9:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anh V La/
Primary Examiner, Art Unit 2612

Anh V La
Primary Examiner
Art Unit 2612

AI
June 23, 2008